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ANS Special Bulletin: AMSAT-NA and AMSAT-UK Donation to P3E

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>From AMSAT HQ SILVER SPRING, MD.
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To All RADIO AMATEURS
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AMSAT Groups Make Donation to AMSAT-DL to Facilitate
Completion of P3E Satellite Amateur Radio Satellite

Following a meeting between representatives of the AMSAT groups from North America (AMSAT-NA), The United Kingdom (AMSAT-UK), and Germany (AMSAT-DL), a decision has been made by AMSAT-NA and AMSAT-UK to donate a total of 40,000 Euros to AMSAT-DL for the purpose of funding the continued operation of the "Zentrales Entwicklungslabor for Electronik", (Central Development Lab for Electronics, aka "The ZEL").

The ZEL was established over 20 years ago at the University of Marburg by AMSAT-DL for the purpose of satellite construction. It is in this suite of workshops that several amateur space frames have been constructed, integrated and tested, including the famous OSCAR 13. The ZEL is staffed by approximately 10 engineers, technicians, administrators, etc., who are a mixture of University employees and AMSAT-DL volunteers. The major current project in the ZEL is the construction of the Phase 3E satellite (P3E). Although construction is centred at the ZEL many of the components come from other parts of the world, including the Integrated Housekeeping Unit (IHU-3), the CAN-Do buss interface modules, and the STAR camera from AMSAT-NA and the U/V SDX transponder module from AMSAT-UK.

P3E is considered vital to the amateur radio space community for a variety of reasons. Currently there is no high orbit satellite carrying analogue transponders allowing DX multiple simultaneous contacts. There are amateur radio satellites in low earth orbit but these, because of their low orbit, only support relatively short range contacts and are only visible for short periods of time (e.g. 10 - 15 minutes). The proposed orbit of P3E will cause it to be visible from amateur radio stations on earth for several hours at a time, allowing increased periods of operation and experimentation.

P3E is considered a 'low risk' approach based on many of the design parameters of the hugely successful OSCAR 13. In order to keep costs low, it is based on a flight spare chassis left over from the OSCAR 13 development programme. There will, however, be several new innovations. For example, the Mode U/V transponder, with a planned 80 KHz bandwidth, will be based on DSP technology using software developed in the UK and SDR HELAPS jointly developed with AMSAT-NA. The IHU-3 will be a new development based on a unit successfully tested on OSCAR-40. There will be several other experiments which will test techniques needed for the proposed flight of an amateur radio spacecraft to Mars (Phase 5A), for example, a low power beacon simulating the weak signals that it will send from the Phase 5A satellite (P5A) on its journey to Mars. This will allow radio amateurs to test their stations in readi-

ness for P5A.

The optimal years for launching a Mars bound spacecraft are 2009 or 2011 so it is important that P3E is launched as soon as possible. This is currently planned to be at the end of 2008. It is realised that the next important step is to obtain an agreement with a suitable launch agency to undertake to fly the satellite.

Further resources:
Previous progress report on P3E http://www.amsat-dl.org/p3e/
Photographs of The ZEL http://n4hy.smugmug.com/gallery/383989/ and
http://www.uk.amsat.org/index.php?option=com_wrapper&Itemid=94

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